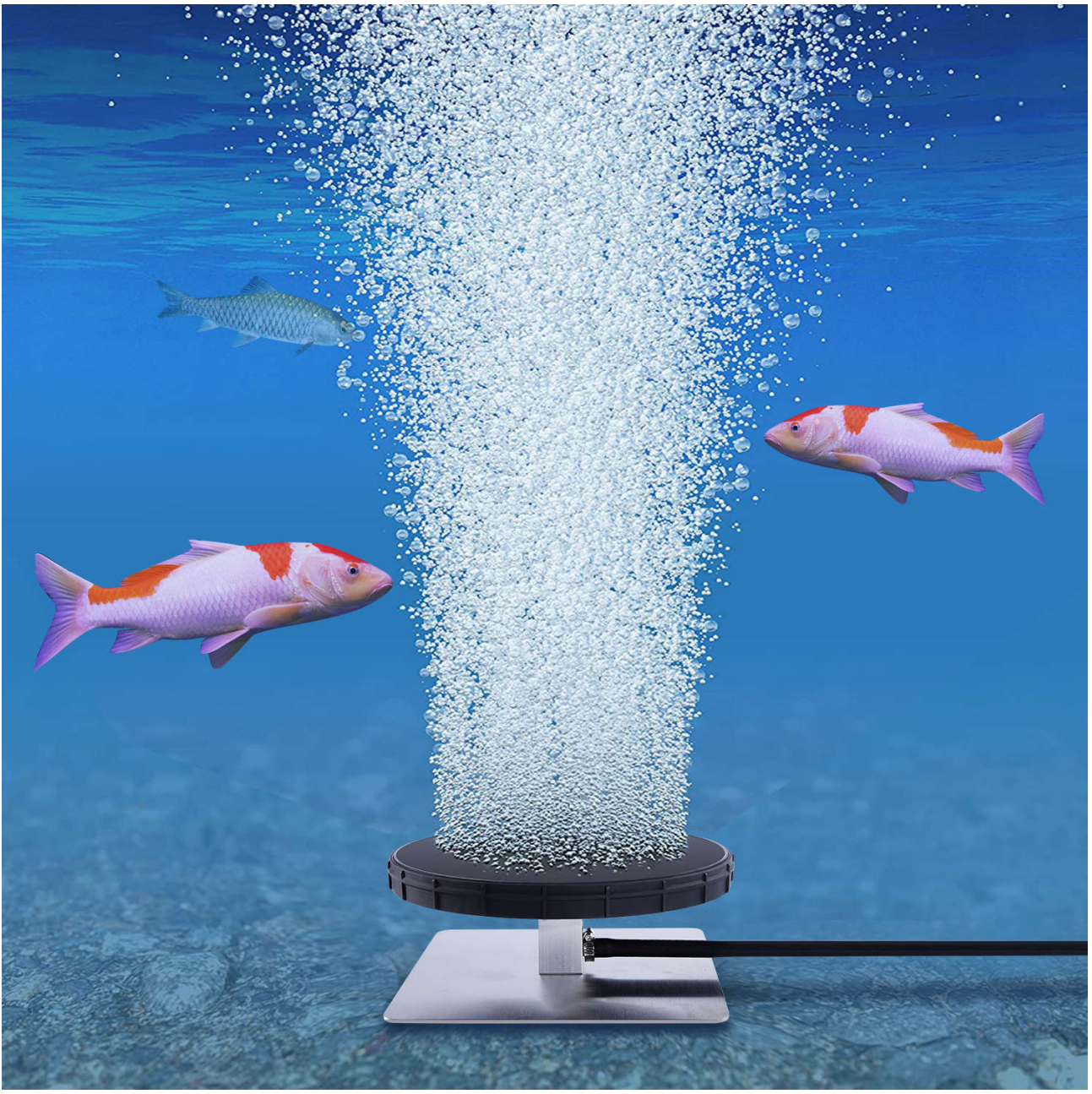

HQUA

Instruction Manual for Pond Aeration System

HQUA-PAS10

HQUA-PAS20



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Version No.20200706

HQUA Technical Support Team At TX

Section 1 Safety Information

Before starting the installation job, it's very important to read the entire instructions below. Make sure that you understand these in order to avoid potential hazards. Failure to do so may result in serious personal injury or damage to the equipment.

Electric Shock

- To reduce the risk of electric shock, connect only to a properly grounded, grounding-type receptacle. If in doubt, have the outlet checked by a qualified electrician.
- This unit is to be used in a circuit protected by a ground fault circuit interrupter (GFCI).
- Disconnect unit from power source before handling or maintenance.
- Do not attempt operate any electric part of this unit. Connect the power supply should be the only installation step that involved the electricity.

Safety Precautions

- **Keep the compressor ventilated, cool and dry. The ambient temperature should not exceed 105°F (40°C). It would hurt the performance and the life time of the unit. Use a cooling fan if it is needed.**
- Do not allow anything to rest on the power cord.
- Never attempt any maintenance function that is not specified in the user manual.
- Never operate the system if unusual noises or odors are detected. Disconnect the power cord from the outlet and call for service



This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.



Improper installation of the grounding plug is able to result in a risk of electric shock. When repair or replacement of the cord or plug is required, do not connect the

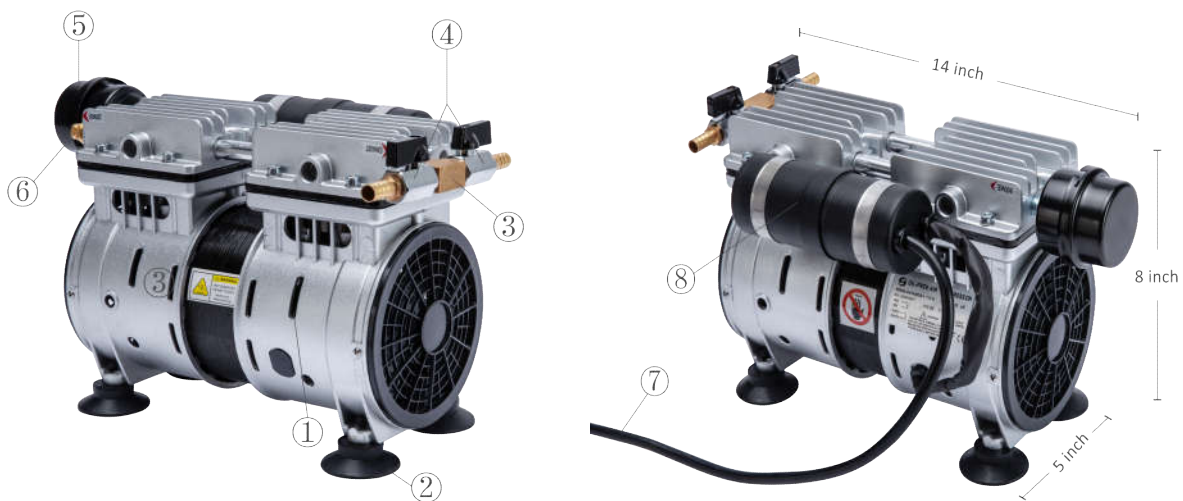
grounding wire to either flat blade terminal. The green wire is the grounding wire.

Check with a qualified electrician when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded. Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified technician

Section 2 General Information

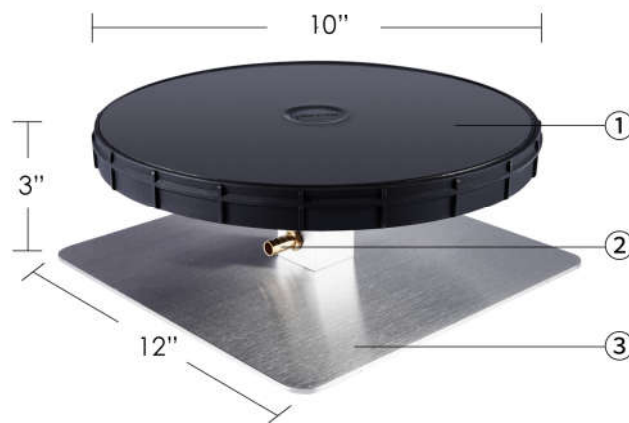
2.1 System Components

HQUA-PAS20RPC Rocking Piston Compressor



1. High efficiency, continuous-duty rocking piston compressor.
2. Rubber compressor mounts reduce noise and vibration for silent operation.
3. Airflow manifold simplifies airflow management to individual diffusers. **(Not provided in PAS10 package, PAS10 only has one hose fitting out for 5/16" airline)**
4. Airflow valve for individual diffusers. **(Not provided in PAS10 package)**
5. Air Filter maximizes the life of the compressor.
6. Pressure relief valve safeguards from back pressure.
7. 4.5 ft Electrical cord with a 3-pin plug.
8. Capacitor that works as a part of the compressor. Do not operate the electrical connection of it.

HQUA-PAS20AD Airflow Diffuser



1. EPDM non-stick 10" membrane diffuser provides effective air diffusing while being virtually maintenance-free.
2. Stainless steel connector for the airline and the diffuser plate.
3. 10" square stainless steel base for the diffuser's stability.
4. 2 Pcs for PAS20 System, 1Pcs for PAS10 System.

HQUA-PAS20AL Airline



5/16" 100 ft lead-free airline is made of durable PVC composite. Fish hook resistant and kink-free. Used from the compressor to diffuser and the connector kits are needed for the connection.

2 Pcs for PAS20 System, 1Pcs for PAS10 System.

2.2 Specification

Item Name	HP	Max Amps	Volts	Max CFM	Power Cord	Max Pond Size	Max Depth
PAS10	1/2	4.8	110V	4.6	5'	1 Acres	65'
PAS20	1/2	4.8	110V	4.6	5'	3 Acres	65'

Notice:

- The airline would increase the pressure to the pump. For PAS10 system, it would increase 0.35-0.4 bar (5-5.8 PSI) for each 100' air hose. That means the MAX depth would diminish 11-13 ft. For PAS20 system, it would increase 0.17-0.2 Bar (2.5-3 PSI) for each 100' air hose (no matter which air way). The MAX depth would diminish 5.5-6.5 ft.
- The amps will be different in different depth caused by the water pressure.

2.3 Installation

Tool Required:

General Information

- Rake
- Boat/Raft/Swimsuit
- 7/8" Wrench
- Shovel
- Phillips screwdriver
- Coast Guard-approved life jacket



Step 1: Find a place for the compressor to be ventilated and shelter from rain, sunshine, also less dust.

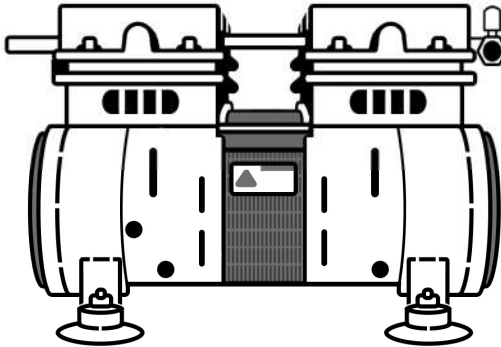
If you use a DIY closed cabinet and housing for this unit. You should open at least two 6"-10" holes on two sides of the pump fans, and install a 6" 20W cooling fan towards to the center of the pump, where the motor stay.

We also provide our housing/cabinet for this ventilation problem, please check:

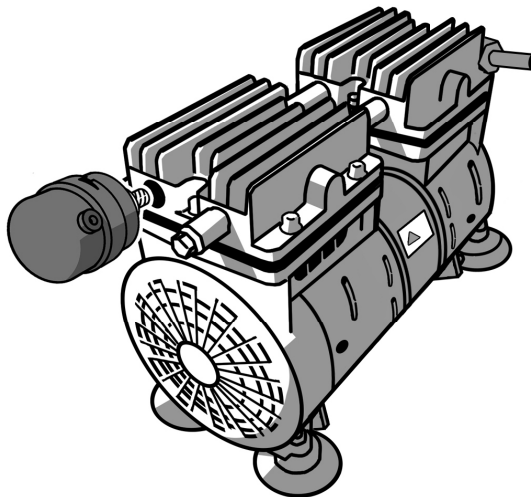
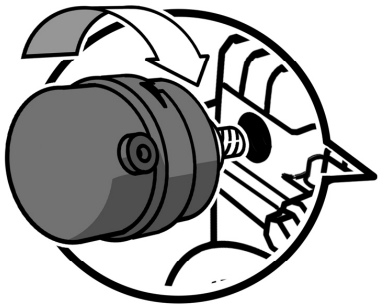
Model name: ASC01, Website link: <https://www.amazon.com/dp/B09ZV37HF3>



Air Filter
HQUA-PAS20AF



Compressor HQUA-PAS20PRC

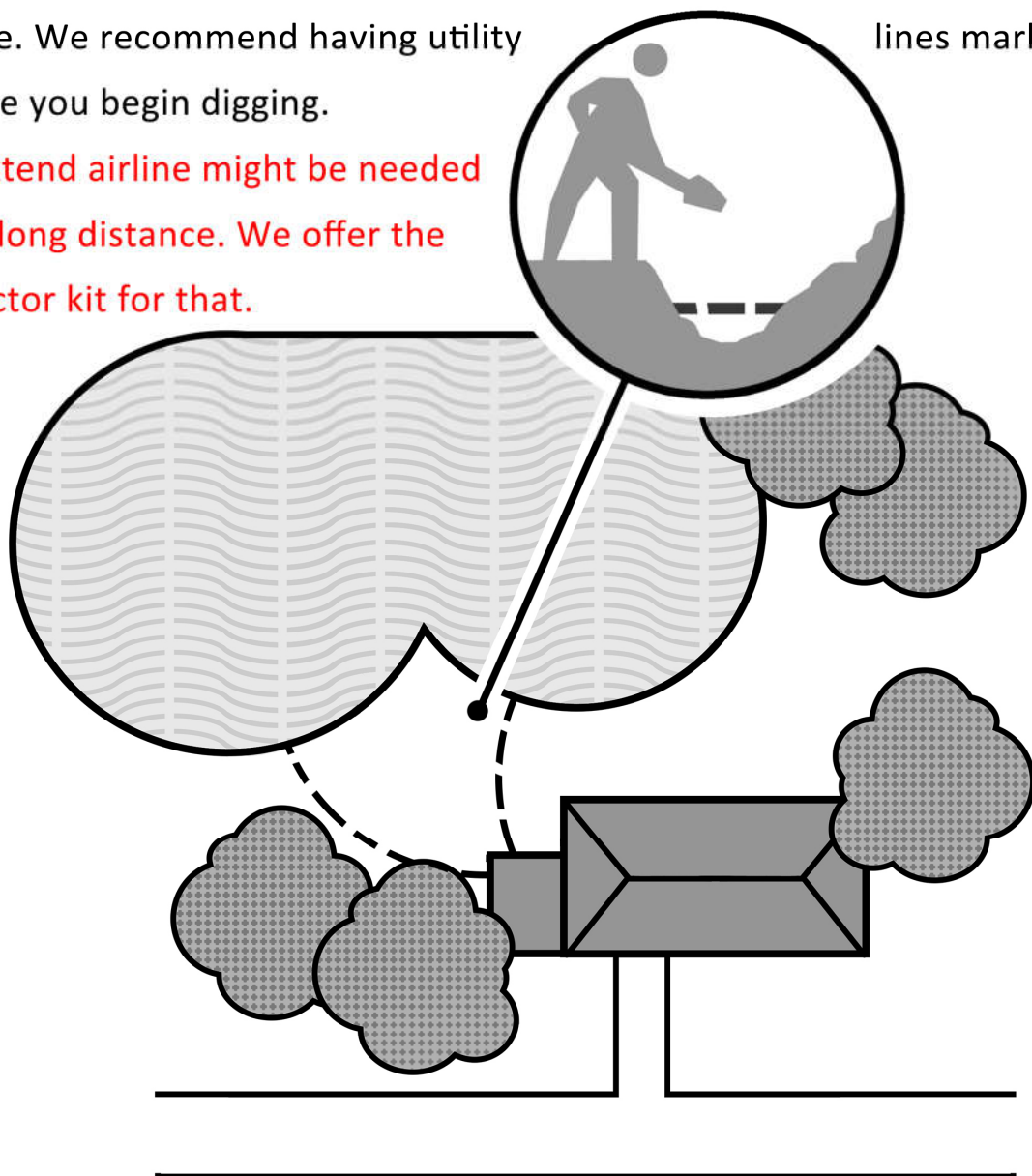


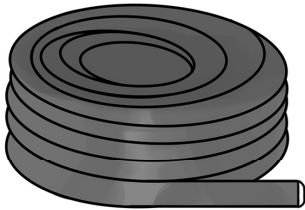
Step 2: Screw the air filter into the compressor right near the pressure relief valve. Hand tighten only, use teflon tape if is needed.

As a clarification, in PAS10 system, there is only one diffuser (HQUA-PAS20AD), one airline (HQUA-PAS20AL) and one way output ball valve at the air outlet of the air pump. But this installation part could both apply on PAS10 and PAS20 system, you might find out some content is not for PAS10 system. But it is still easy to understand and finish the installation job.

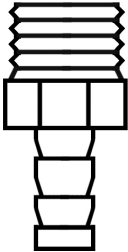
Step 3: Using your shovel, dig a trench from the shelter to the pond's edge. This trench should be a minimum depth of 8" to protect the airline. We recommend having utility lines marked before you begin digging.

An extend airline might be needed for a long distance. We offer the conector kit for that.





Airline HQUA-PAS20AL

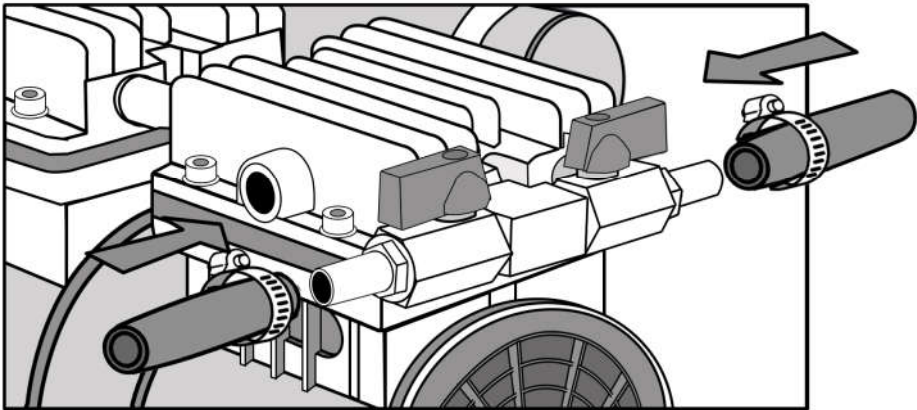


Conector Kit



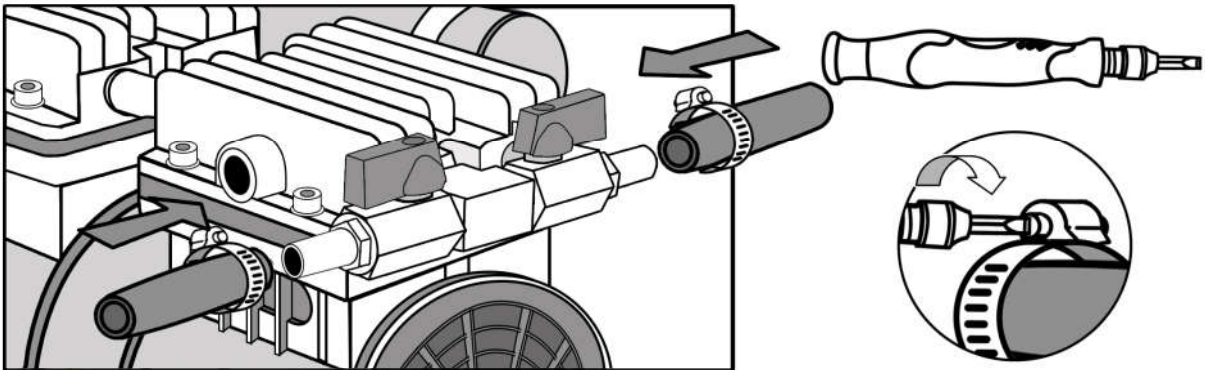
Hose clamp HQUA-PAS20HC

HQUA-PAS20CK01



Step 4:

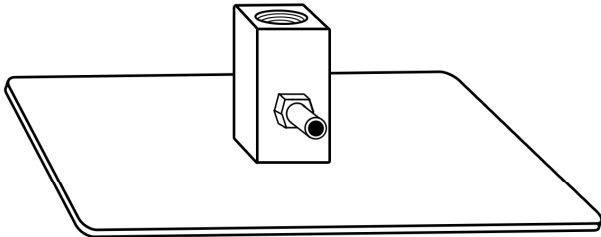
Slide a hose clamp (HQUA-PAS20HC) onto the airline and insert it into the conector kit (HQUA-PAS20CK01).



Step 5: Using a phillips screw driver, secure the hose clamp onto the rubber airline.



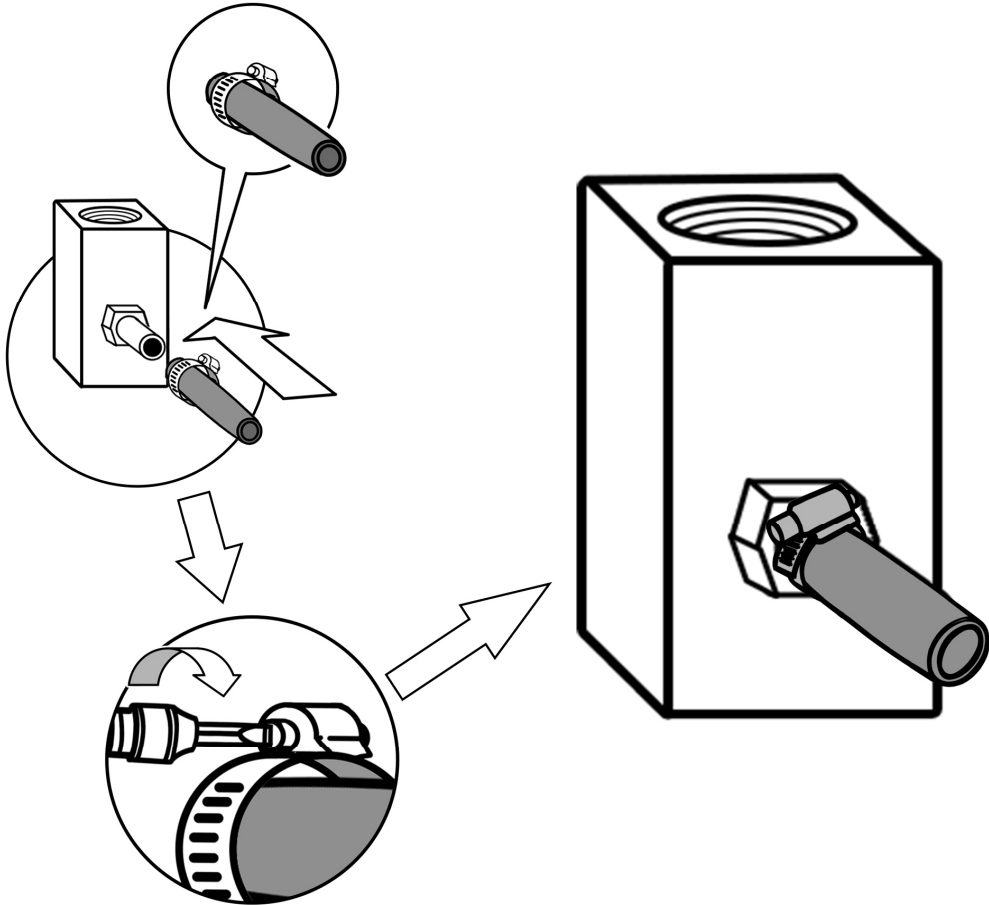
Step 7: Backfill the airline trench in a few areas to temporarily keep the airline in place until installation is complete.



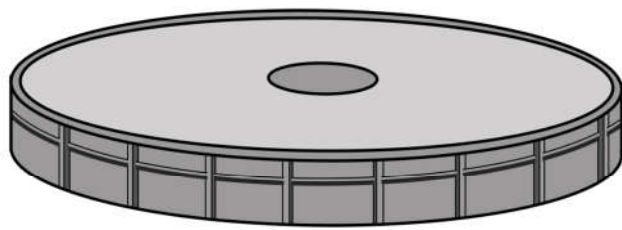
Plastic Base Box HQUA-PAS20PB



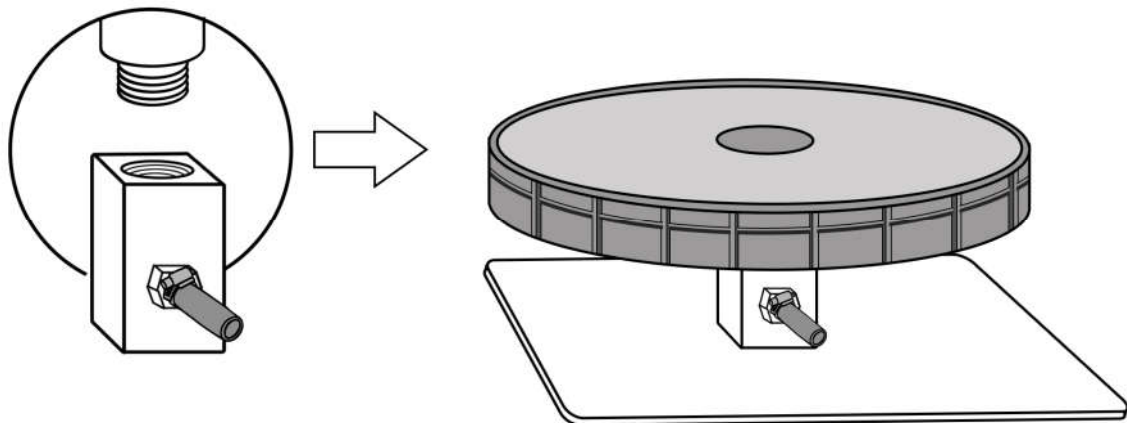
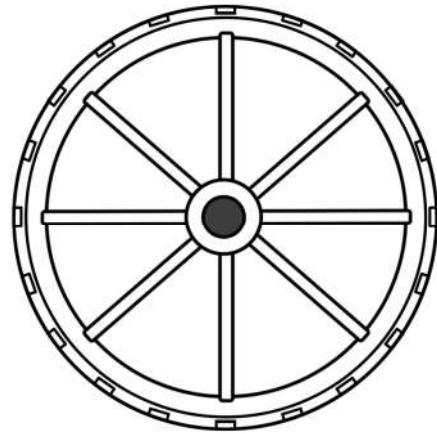
Hose clamp HQUA-PAS20HC



Step 8: Slide a hose clamp onto the airline from the other end. And insert it into the connector kit on the plastic base box. Using a phillips screw driver, secure the hose clamp onto the rubber airline.



10" EPDM Diffuser plate
HQUA-PAS20DP



Step 8: Slide a hose clamp onto the airline from the other end. And insert it into the connector kit on the plastic base box. Using a phillips screw driver, secure the hose clamp onto the rubber airline.

Final Step: Installing Diffusers from a Boat/Raft:

Have one person on shore guiding the airline as a second person uses a boat or raft, extend the airline out to the area of the pond that the diffuser will be located. Gently release the diffuser into the water. Repeat until all diffusers are in position.

Complete backfill on airline trenches and level with a rake. Complete installation by reviewing and following the Initial Start-Up Procedure in Section 2.4.

Notice:

1. Make sure your diffusers won't get twined by any nets or fish line.

2. Make sure two diffusers are separated for equal water space to keep their best performance.

2.4 Initial Start-up & Seasonal Operation

Notice:

Ventilation is very important for this pump to maintain a longer working lifetime. The worn of the bearing and the motor is unstoppable. And it is impossible to replace or repair those parts without very professional help. We highly recommend you use a housing with fan to help the pump cool down when it is working, if you want this pump work for a long time than 2 year warranty.

We provide an outlet timer to help the customer schedule a better running in different seasons. With the higher temperature, you need to run this pump for longer time per day. You might concern about the amount of the dissolved oxygen. For that, we suggest you run this unit for a whole week and observe the pond condition to judge whether you would need another pump or aerator for cross working to help.



The circulation of poor quality, low oxygen, deep water to the pond's surface can introduce harmful gases and by-products into the previously healthy upper regions of the water column. These by-products can make the upper regions unfit for aquatic life and could result in fish-kill.

We suggest the customer initial Start-Up procedure to prevent fish-kill No matter what kind of pond you have. Or anytime system has been shut-off for an extended period of time.

Start-Up Procedure:

Day 1: Run system for 30 minutes; turn system off for remainder of day.

Day 2: Run system for 1 hour; turn system off for remainder of day.

Day 3: Run system for 2 hours; turn system off for remainder of day.

Day 4: Run system for 4 hours; turn system off for remainder of day.

Day 5: Run system for 8 hours; turn system off for remainder of day.

Day 6: Run system for 16 hours; turn system off for remainder of day.

Day 7: Begin running system 24 hours/day, 7 days/week.

Summer Operation

To reduce the risk of fish kills in hot summer months and for optimum aeration benefits, HQUA Aeration Systems should run continuously throughout the summer.

Winter Operation

Owner assumes all responsibility for operating HQUA Aeration System during winter months. Operating in freezing conditions on an ice-covered pond will cause large open water areas at diffuser sites. Ice thickness around open areas will be much thinner than the surrounding areas. HQUA strongly recommends that "Danger - Thin Ice" be posted at frequent intervals around pond.

If you choose to turn your system off for the winter, do the following:

- Unplug your aeration system.
- Disconnect Compressor and the Airline.
- Cover airline ends with the caps or cloth to prevent debris from entering airline.
- If operating during the winter season, condensation could cause airlines to freeze. If so:
- Use 1 cup isopropyl alcohol in the airline running out to each diffuser plate.
- Turn on compressor to push through line and free any ice blockage.

Notices:

- Replacing the air filter element is very important.
- Using an outlet timer to cool down the compressor every 2 hours running is very important.
- A good ventilation condition with a fan is essential.

Section 3 Maintenance

HQUA Aeration Systems are designed for low-maintenance and require minimal scheduled maintenance. Keep the room cool, dry and ventilated for the compressor.

- Always unplug system before performing any maintenance or troubleshooting.
- Always unplug system and refer servicing to a qualified electrician when: cord is damaged or frayed, compressor, power control, compressor fan, or other electrical components are producing unusual noises or odors.

Notice: Local environmental conditions may require more frequent maintenance.

WARNING: Compressors are equipped with a thermal overload switch. If temperature becomes high enough to trip the overload, the compressor will shut down. It will then automatically start up when temperature decreases as long as power is applied.

4.1 Replacement Parts

EVERY 12-18 MONTHS-Rebuild Kits: When you find the air bubbles seems smaller compare to the beginning. Check/Replace the rebuild kits in the compressor to rise up the air tightness. HQUA-PAS20RB is what you need.

EVERY 1-3 MONTHS – Air Filter: Check, clean/replace air filter HQUA-PAS20AF.

Pressure Relief Valve: Check to ensure air is not escaping from valve and replace if needed.

EVERY 24-36 MONTHS – Membrane Sticks: We recommend inspecting and/or cleaning the membrane diffuser sticks every 24-36 months. HQUA-PAS20DP is what you need.

All these replacements could be found on amazon. Please search the item name and get them.

Section 4 Troubleshooting

Troubleshooting

IF THE COMPRESSOR IS NOT WORKING:		
Check	Possible Reason	Solution
1. Check for power.	Compressor is not receiving power.	Check the power outlet or electrical cord.
2. GFCI circuit tripped.	Damage to electrical cord or low voltage from power supply.	Contact a qualified electrician for professional assistance.
3. GFCI circuit not tripped.	GFCI malfunction.	
4. Poor connection with the capacitor.	Wiring loosened or was damaged during the shipment.	Contact HQUA or local dealer for repair/replacements.
5. No capacitor wiring issue can be observed.	Bad capacitor.	
6. The motor is not running.	Died motor.	

IF THE COMPRESSOR IS WORKING:			
ISSUE	Check	Possible Reason	Solution
No bubbles at any diffusers	No air leaks detected, the compressor running louder and possible excessive vibration.	Compressor air filter is dirty/dogged.	Clean or replace air filter. Do not wet the filter!
	Compressor operating normally or making unusual noises. Exhibits reduced pressure and/or air flow.	Compressor needs rebuild kits and possibly new air filter.	Contact HQUA or local dealer with specifications for rebuild kits. Clean or replace air filter. Do not wet the filter!
No bubbles at some diffuser plates.	Check for leaks at all connection in line. If none are audible, carefully spray LITTLE soapy water onto connections and look for bubbles.	Vibration loosened connection or cracked fitting.	Tighten loose connection or replace cracked fitting as necessary.
	Are all flow control valves in compressor wide open?	Improper "balancing" of diffusers.	Adjust air flow valves on main unit until all diffusers operate properly.
	No leaks and valve problem.	Compressor beginning to lose compression and needs rebuild kits.	Contact HQUA or local dealer with specifications for rebuild kits. Clean or replace air filter. Do not wet the filter!

Troubleshooting

Large rolling bubbles instead of fine bubbles at surface above one or more diffuser plates.	Inspect each diffuser plate for malfunction.	Diffuser membrane damaged, diffuser plate fitting broken or diffuser plate is flipped over.	Contact HQUA or local dealer for repair/replacement.
Air coming out of pressure relief valve.	Inspect diffuser plates and tubing for clogging.	Clogging.	Remove any overgrowth around diffuser membrane surface.
	Nothing clogging.	Bad pressure relief valve.	Contact HQUA or local dealer for repair/replacement.
Compressor stops working for periods of time, then starts.	Inspect the ventilation condition for compressor.	Compressor over-heating due to bad ventilation.	Make sure the room is ventilated. Try to low down the temperature of it.
Getting noisy than before and nothing else wrong.	Check bubbles.	The bearing is worn.	Nothing needs to be done. Keep running the unit.
Compressor shakes erratically and is making loud noises.	Check for low voltage while compressor is running.	Gauge of supply wires to circuit possibly undersized.	Replace the supply wires by a qualified electrician.
	Check for clogged air filter.	Air filter in need of replacement.	Clean or replace air filter. Do not wet the filter!

Section 5 After-Sales Service

If you need any support, or have questions about the system, please contact our Technical Support team via hqua.tech@gmail.com and we will be glad to assist you. We sincerely hope that you enjoy the benefits of clean and beautiful pond water after the installation of HQUA PAS Aeration system.

Part Number List

Part Number	Description
PAS20RPC	1/2 HP 550W Max Air Pump, “T” branch valve included
PAS20AL	3/8” 100 ft PVC Airline
PAS20AD	EPDM 10” Membrane Diffuser, St. Steel Base Combination
Accessories	
PAS20DP	EPDM 10” Membrane Diffuser
PAS20AFC	Air Filter Cartridge
PAS20CK01	3/8” Barb Hose Fitting × 1/4” Screw MTP
PAS20HC	1/2” Hose clamp
PAS2001	10” St. Steel Base, “L” Adapter Fitting included
PAS1001	3.5 Bar 1/4” MTP Pressure Relief Valve
PAS1002	“T” Branch Ball Valve

Our Commitment

Two-Years Limited Warranty for HQUA PAS10/20 Pond Aerator

HQUA warrants that the PAS10/20 Pond Aerator is free from defects of material and workmanship for a period of 2 years from the date of purchase. During this period, HQUA will repair or replace, at its option, any defective HQUA UV chamber. Please return the defective part to your dealer for claim.

Additional Warranty:

Five-Years Limited Warranty for HQUA-PAS20AD Air Diffuser.

Five-Years Limited Warranty for HQUA-PAS20AL Air Line/Weighted Tubing.

During this period, HQUA will repair or replace, at its option, any defective HQUA UV chamber. Please return the defective part to your dealer for claim.

.....**The End**.....